NICKEL-BASE ALLOY

Abstract of Disclosure

A family of castable and weldable nickel-base alloys that exhibit a desirable balance of strength and resistance to corrosion and oxidation suitable for gas turbine engine applications. A first alloy consists essentially of, by weight, 18% to 20% cobalt, 22.2% to 22.8% chromium, 1.8% to 2.2% tungsten, greater than 1.5% to 2.3% aluminum, 1.6% to 2.4% titanium, where the sum of aluminum and titanium is 2.8% to 4.4%, 0.7% to 0.9% columbium, 0.9% to 1.9% tantalum, 0.003% to 0.009% boron, 0.002% to 0.02% zirconium, 0.05% to 0.10% carbon, with the balance essentially nickel and incidental impurities. A second alloy consists essentially of, by weight, 5% to 8% cobalt, 22.2% to 22.8% chromium, 1.8% to 2.2% tungsten, 1.2% to 2.3% aluminum, 1.6% to 2.4% titanium, where the sum of aluminum and titanium is 2.8% to 4.4%, 0.7% to 0.9% columbium, 0.9% to 1.9% tantalum, 0.003% to 0.009% boron, 0.002% to 0.02% zirconium, 0.05% to 0.10% carbon, with the balance essentially nickel and incidental impurities.

Figures